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## On *Stilicoderus* VI. Two new species from South Vietnam and additional records (Coleoptera: Staphylinidae: Paederinae)

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**A b s t r a c t :** Two species of *Stilicoderus* SHARP, 1889 from South Vietnam are described and illustrated: *Stilicoderus bisinuatus* nov.sp. of the *S. granulifrons* group and *S. harpago* nov.sp. of the *S. discalis* group. Additional records of five species are reported, among them a new record from Bhutan. The genus now includes a total of 113 species.

**K e y   w o r d s :** Coleoptera, Staphylinidae, Paederinae, *Stilicoderus*, Palaearctic region, Oriental region, Vietnam, taxonomy, new species, new records.

### Introduction

The paederine genus *Stilicoderus* SHARP, 1889 previously included 111 species distributed in the Oriental, the southern East Palaearctic, and the Australian regions. An updated catalogue was provided by ASSING (2016).

In the meantime additional material has been studied, this material including records of five described species, as well as two undescribed species from South Vietnam. The latter were collected during expeditions in Vietnam in the framework of a Memorandum of Understanding between VNMN and MZUF.

### Material and methods

The material treated in this study is deposited in the following public and private collections:

- MZUF ..... Museo di Zoologia, Università di Firenze (L. Bartolozzi)
- NHMW ..... Naturhistorisches Museum Wien (H. Schillhammer)
- NME ..... Naturkundemuseum Erfurt (M. Hartmann, assisted by W. Apfel)
- NMP ..... National Museum of Natural History, Praha (J. Hájek)
- VNMN ..... Vietnam National Museum of Nature, Hanoi
- cAss ..... author's private collection

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using a digital camera (Nikon Coolpix 995) and a photographing device constructed by Arved Lompe (Nienburg) and CombineZ software.

Body length was measured from the anterior margin of the mandibles (in resting position) to the abdominal apex, the length of the forebody from the anterior margin of the mandibles to the posterior margin of the elytra, head length from the anterior margin of the frons to the posterior margin of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra (at the suture), and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule, if not indicated otherwise. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

The species group concept used in the present paper is based on ROUGEMONT (1986, 1996).

### Descriptions and additional records

#### *Stilicoderus japonicus* group

##### *Stilicoderus japonicus* SHIBATA, 1968

Material examined: Bhutan: 1♂, 1♀, Gaylegphug Province, Gaylephug, 250 m, 7-10.VII.1990, leg. Holzschuh (NHW, cAss). China: 1♂, Sichuan, Wolong National Nature Reserve, Yinchanggou village env., Panda valley, 30°58'N, 103°07'E, 2120 m, 24.VI.2014, leg. Hájek & Růžička (NMP).

Comment: The vast distribution of *S. japonicus* ranges from West Bengal (North India) to Japan; for a distribution map see ASSING (2013). The above material from Bhutan represents a new country record.

##### *Stilicoderus rastratus* ASSING, 2013

Material examined: China: 3 exs., Sichuan, Emei Shan, Jieyingdian Temple, 29°32'N, 103°20'E, 2480 m, bamboo and mixed forest, sifted, 7.VI.2014, leg. Hájek & Růžička (NMP, cAss); 2 exs., Emei Shan, Leidongping env., 29°33'N, 103°20'E, 2410 m, bamboo, debris sifted, 9.VI.2014, leg. Hájek & Růžička (NMP, cAss).

Comment: *Stilicoderus rastratus* had been recorded from only two localities in Sichuan (ASSING 2013b, 2016).

#### *Stilicoderus variolosus* group

##### *Stilicoderus parvus* CAMERON, 1936

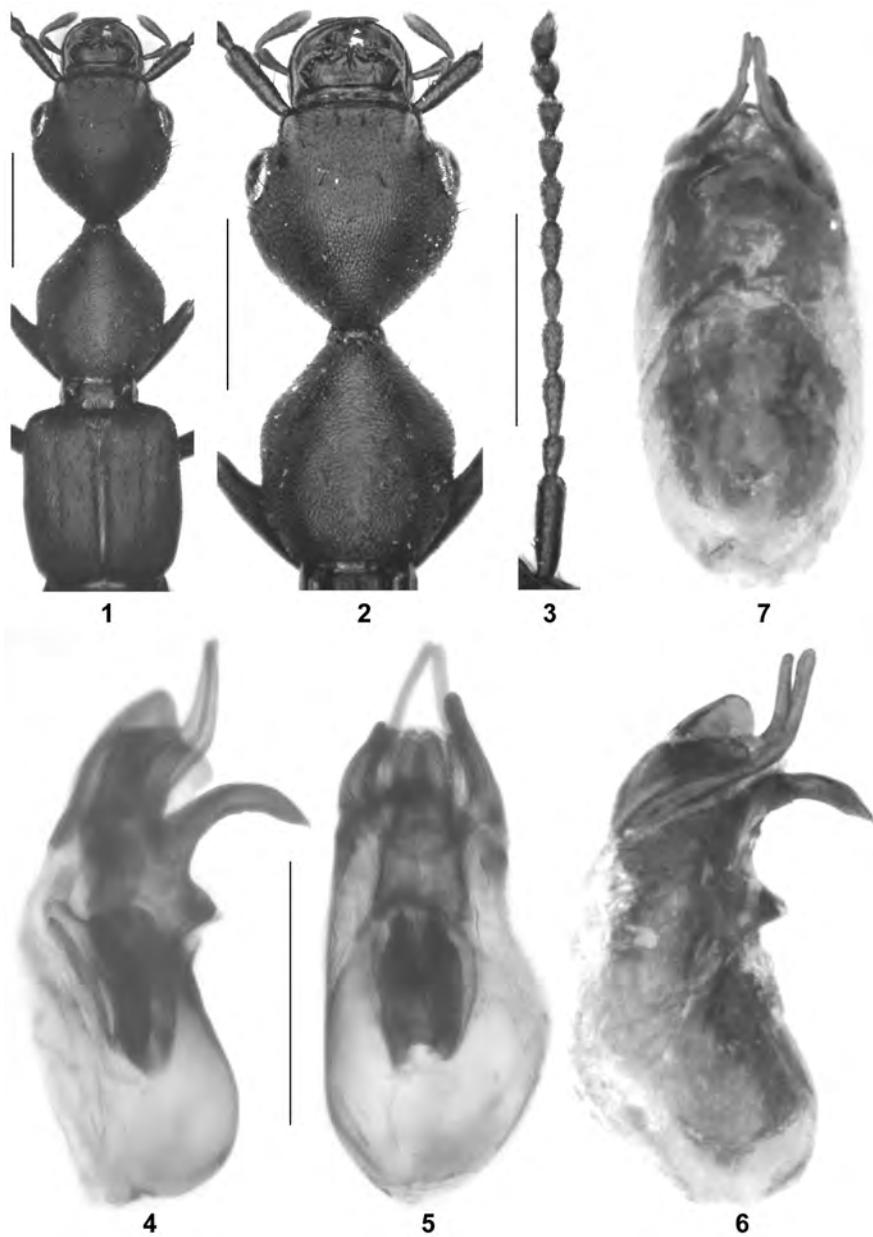
Material examined: Indonesia: 4 exs., Jawa Berat, Mount Halimun, 19-25.VIII.2009, leg. Majer (cAss).

Comment: The known distribution of *S. parvus* ranges from Thailand across Sumatra to Java.

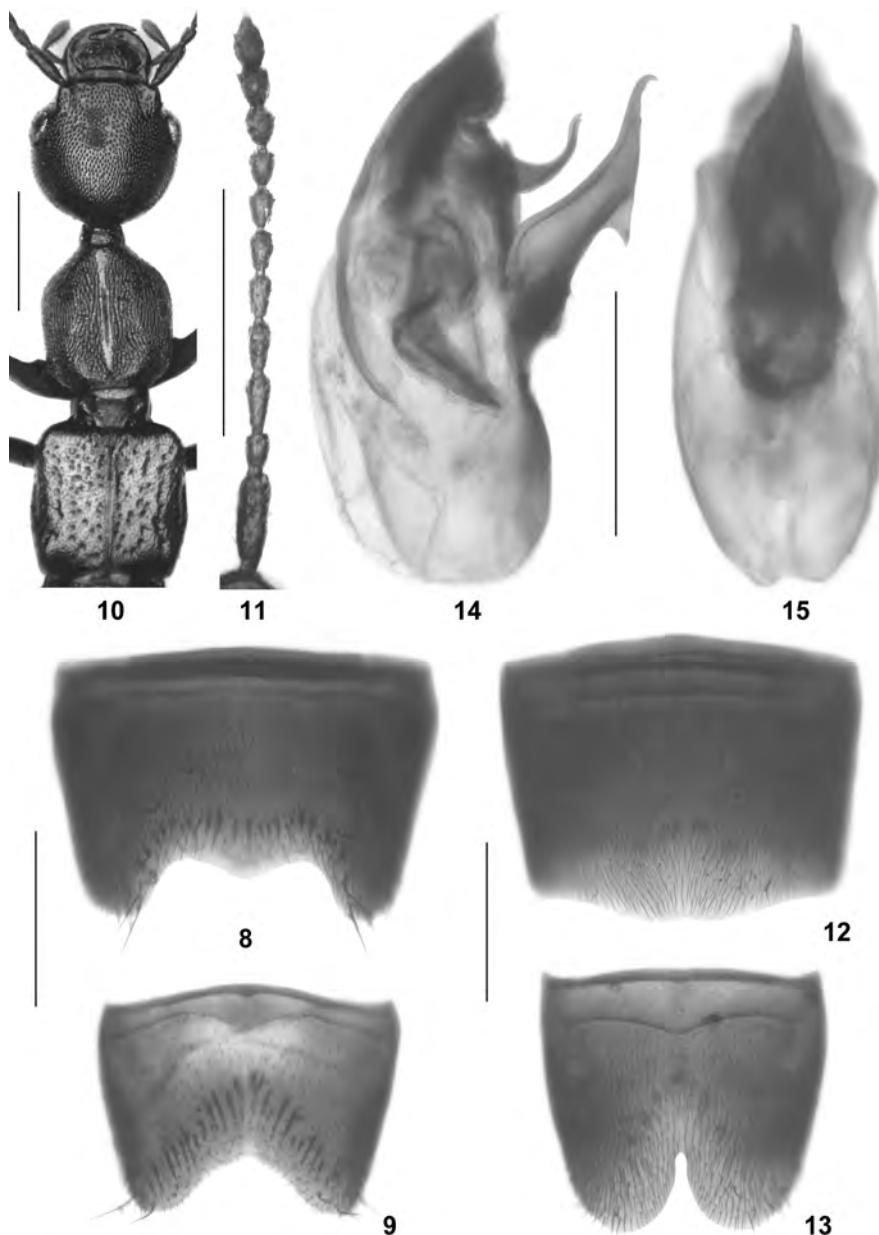
##### *Stilicoderus variolosus* COIFFAIT, 1875

Material examined: Nepal: 6 exs., Arun valley, Chichila, 27°28'N, 87°14'E, 1900 m, 9.V.2014, leg. Schmidt (NME, cAss).

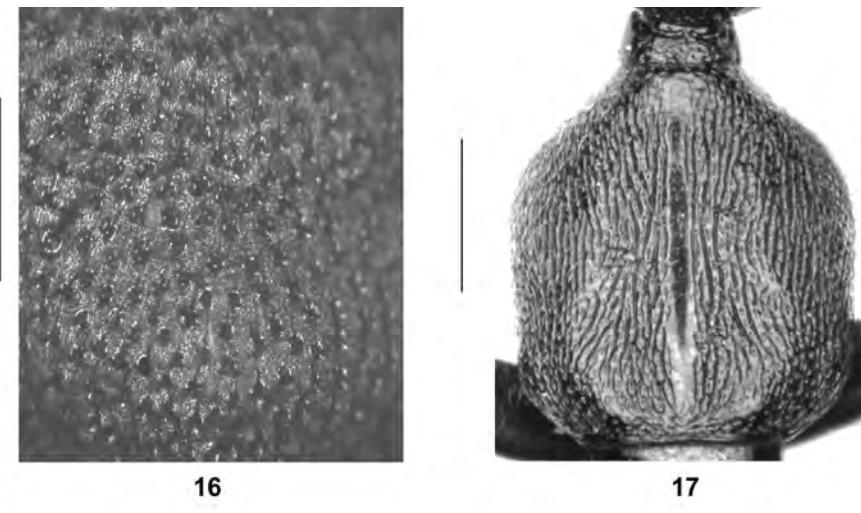
Comment: This species is distributed in the Himalaya (Nepal, North India).



**Figs 1-7:** *Stilicoderus bisinuatus* nov.sp.: (1) forebody; (2) head and pronotum; (3) antenna; (4-5) aedeagus in lateral and in ventral view (transparent preparation); (6-7) aedeagus in lateral and in ventral view (dry preparation). Scale bars: 1-3: 1.0 mm; 4-7: 0.5 mm.



**Figs 8-15:** *Stilicoderus bisinuatus* nov.sp. (8-9) and *S. harpago* nov.sp. (10-15): (8, 12) male sternite VII; (9, 13) male sternite VIII; (10) forebody; (11) antenna; (14-15) aedeagus in lateral and in ventral view. Scale bars: 10-11: 1.0 mm; 8-9, 12-15: 0.5 mm.



**Figs 16-17:** *Stilicoderus bisinuatus* nov.sp. (16) and *S. harpago* nov.sp. (17): (16) antero-median dorsal portion of head; (17) pronotum. Scale bars: 17: 0.5 mm; 16: 0.1 mm.

#### *Stilicoderus granulifrons* group

This group previously included three externally similar species, two of them described very recently: *S. granulifrons* (ROUGEMONT, 1985) (Myanmar; Thailand); *S. confusus* ASSING, 2016 (China: West Yunnan; India: Meghalaya); *S. brachypterus* ASSING, 2016 (East Nepal). For a map illustrating the distribution of these species see ASSING (2016).

#### *Stilicoderus bisinuatus* nov.sp. (Figs 1-9, 16)

**T y p e m a t e r i a l :** Holotype ♂: "S VIETNAM: Lâm Đồng Prov., Lac Durong Distr., Bidoup Núi Ba Natl Park, surr. Giang Ly Ranger Station (1420-1460 m a.s.l.) 16-21.VI.2015 / legit L. Bartolozzi, G. Chelazzi, S. Bambi, F. Fabiano, E. Orbach, V. Sbordoni (n. Magazzino 3023) / Holotypus ♂ *Stilicoderus bisinuatus* sp.n. det. V. Assing 2017" (VNMN). Paratypes: 1 ♂, 1 ♀: same data as holotype (MZUF, cAss) [paratype in MZUF registered as MZUF 18319].

**E t y m o l o g y :** The specific epithet (adjective) alludes to the strongly bisinuate posterior margin of the male sternite VII.

**D e s c r i p t i o n :** Body length 7.2-8.0 mm; length of forebody 4.8-5.0 mm. Elytra approximately as long and 1.2 times as broad as pronotum. External characters (Figs 1-3) as in *S. granulifrons*, except as follows:

Head (Figs 1-2) with lateral margins behind eyes weakly convex in dorsal view, posterior angles completely obsolete; interstices with extremely fine and dense microsculpture rendering the dorsal surface matt (Fig. 16).

♂: sternite VII (Fig. 8) posteriorly with deep and broad excision, margin of this excision strongly bisinuate; sternite VIII (Fig. 9) with broad and deep, somewhat obtusely V-shaped posterior excision; aedeagus (Figs 4-7) 0.85 mm long (total length 1.1 mm); ventral process stout, strongly sclerotized, strongly curved, and apically acute in lateral view; apical internal structures slender and of subequal length (ventral view).

**C o m p a r a t i v e n o t e s :** *Stilicoderus bisinuatus* differs from the three other species of the *S. granulifrons* group as follows:

from *S. granulifrons* by a head of different shape and without shine (*S. granulifrons*: head with glossy interstices; lateral margins behind eyes more strongly convex), broader elytra with more pronounced humeral angles, a much deeper and strongly bisinuate posterior excision of the male sternite VII, and by a larger aedeagus with a less strongly curved ventral process and with more strongly sclerotized apical structures of different shapes;

from *S. confusus* by a longer posterior portion of the head (*S. confusus*: head more abruptly tapering posteriorly), a deeper and strongly bisinuate posterior excision of the male sternite VII, a differently shaped posterior excision of the male sternite VIII (*S. confusus*: excision broadly concave), and the morphology of the aedeagus (*S. confusus*: ventral process stouter and more strongly curved; apical structures shorter, less slender, and less strongly sclerotized);

from *S. brachypterus* by a head of different shape and without shine (*S. brachypterus*: lateral margins behind eyes more strongly convex in dorsal view; interstices glossy), by longer and broader elytra (*S. brachypterus*: elytra 0.81-0.86 times as long and approximately 1.1 times as broad as pronotum), a broader, deeper, and strongly bisinuate posterior excision of the male sternite VII, a less broad and less deep posterior excision of the male sternite VIII, and an aedeagus with a shorter ventral process and much more slender and more strongly sclerotized apical structures.

For illustrations of *S. granulifrons*, *S. confusus*, and *S. brachypterus* see ASSING (2016).

**D i s t r i b u t i o n :** The type locality is situated at about 12°08'N, 108°32'E in South Vietnam, at an altitude of approximately 1450 m.

### *Stilicoderus discalis* group

#### *Stilicoderus harpago* nov.sp. (Figs 10-15, 17)

**T y p e m a t e r i a l :** Holotype ♂: "S VIETNAM: Lâm Đồng Prov., Lac Durong Distr., Bidoup Nuba Natl Park, surr. Giang Ly Ranger Station (1420-1460 m a.s.l.) 16-21.VI.2015 / legit L. Bartolozzi, G. Chelazzi, S. Bambi, F. Fabiano, E. Orbach, V. Sbordoni (n. Magazzino 3023) / Holotypus ♂ *Stilicoderus harpago* sp.n. det. V. Assing 2017" (VNMN). Paratypes: 2 ♀♀: same data as holotype (MZUF, cAss) [paratype in MZUF registered as MZUF 18320].

**E t y m o l o g y :** The specific epithet (Latin: grapnel, grappling hook) is a noun in apposition and alludes to the shape of the ventral process in lateral view.

**D e s c r i p t i o n :** Body length 7.2-7.8 mm; length of forebody 4.5-4.8 mm. Coloration: body black; elytra with a relatively large pale-reddish spot extending diagonally from the humeral angles to the posterior two-fifths or the posterior third of the suture (i.e., scutellar portion, suture, and the posterior third to two-fifths black); legs black with slightly paler tarsi; antennae brown with blackish antennomere I.

Head (Fig. 10) 1.01-1.08 times as broad as long, weakly convex in cross-section; lateral margins behind eyes broadly convex in dorsal view; punctures dense, moderately coarse, and of oval shape; interstices narrower than diameter of punctures, without microsculpture. Eyes strongly convex, 0.3-0.4 times as long as postocular region from posterior margin of eye to posterior constriction of head. Antenna (Fig. 11) 2.3-2.4 mm long; antennomere IV approximately twice as long as broad, shorter than III; antennomeres V-

X of gradually decreasing length; preapical antennomeres approximately as broad as long.

Pronotum (Figs 10, 17) 1.06-1.10 times as long as broad and 0.84-0.85 times as broad as head, moderately convex in cross section; punctuation predominantly arranged in longitudinal rugae, defined punctures present only near pronotal margins; midline with pronounced, glossy impunctate band.

Elytra (Fig. 10) 0.87-0.91 times as long as pronotum; punctuation composed of coarse and somewhat irregularly distributed macropunctures and dense micropunctures; interstices without microsculpture.

Abdomen with fine and dense punctuation; microsculpture of anterior impressions of tergites III-VI pronounced, less pronounced on remainder of tergal surfaces.

♂: posterior margin of sternite VII broadly convex, in the middle indistinctly concave (Fig. 12); posterior incision of sternite VIII very narrow anteriorly (Fig. 13); aedeagus (Figs 14-15) 1.15 mm long, with a ventral process of distinctive shape and with a pair of curved and acute apical structures.

**C o m p a r a t i v e n o t e s :** Previously, five *Stilicoderus* species were known from Vietnam, all of them with reddish spots on the elytra. Aside from the highly distinctive aedeagus, *S. harpago* is distinguished from them as follows:

from *S. fenestratus* FAUVEL, 1895 by blackish legs, a more transverse head, less convex pronotum and elytra, rugose punctuation of the pronotum, and a male sternite VIII of completely different shape;

from *S. denticulatus* ASSING, 2013 by a larger and more depressed body, blackish legs, a transverse head with more convex lateral margins posteriorly (dorsal view), larger eyes, rugose punctuation of the pronotum, denser macropunction on the elytra, a matt abdomen, and a male sternite VIII of different shape;

from *S. feae* FAUVEL, 1895 by smaller body size, more slender head and pronotum, blackish legs, rugose punctuation of the pronotum, and a male sternite VIII of completely different shape;

from *S. discalis* FAUVEL, 1895 by a longer body, a much more slender and less depressed forebody, darker and longer legs, less dense punctuation of the head, a less matt pronotum with differently rugose punctuation, shorter legs, and a male sternite VIII of different shape;

from *S. strigosus* (ROUGEMONT, 1985) by larger body size, a much more slender and less depressed forebody, distinctly smaller and less convex eyes, darker and longer legs, less dense and finer punctuation of the head, a less matt pronotum with the rugose punctuation not distinctly oblique, shorter legs, and a male sternite VIII of different shape.

For illustrations of *S. fenestratus*, *S. feae*, *S. discalis*, *S. strigosus*, and *S. denticulatus* see ROUGEMONT (1986) and ASSING (2013a), respectively.

*Stilicoderus harpago* is attributed to the *S. discalis* rather than the *S. signatus* group primarily based on the rugose punctuation of the pronotum. It is distinguished from the species previously attributed to this group (e.g., *S. discalis*, *S. strigosus*) by a more slender and less depressed body with longer legs.

**D i s t r i b u t i o n :** The type locality is identical to that of *S. bisinuatus*.

### ***Stilicoderus signatus* group**

#### ***Stilicoderus kambaitiensis* (SCHEERPELTZ, 1965)**

Material examined: Nepal: 1♀, Arun valley, Chichila, 27°28'N, 87°14'E, 1900 m, 9.V.2014, leg. Schmidt (NME).

Comment: The vast distribution of *S. kambaitiensis* ranges from the Himalaya to Laos.

### **Acknowledgements**

I am indebted to the colleagues indicated in the material section for the loan of material from the collections under their care. Guillaume de Rougemont (Oxford) reviewed the manuscript.

### **Zusammenfassung**

Zwei Arten der Gattung *Stilicoderus* SHARP, 1889 aus Südvietnam werden beschrieben und abgebildet: *Stilicoderus bisinuatus* nov.sp. aus der *S. granulifrons*-Gruppe und *S. harpago* nov.sp. aus der *S. discalis*-Gruppe. Weitere Nachweise von fünf beschriebenen Arten werden gemeldet, darunter ein Erstnachweis aus Bhutan. Die Gattung enthält derzeit insgesamt 113 Arten.

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